+ 0 Facts/ + 0 Shortcut – if zero is added to any number, or any number is added to 0, there is not change in the number

0 + 5 = 5

0 + 17 = 17

8 + 0 = 8

13 + 0 = 13

+ 1 Facts/+ 1 Shortcut – one plus any number, or any number plus 1, results in the next larger number

1 + 5 = 6

1 + 17 = 18

8 + 1 = 9

13 + 1 = 14

+ 9 Facts/+ 9 Shortcut – to find 9 plus any number, or any number plus 9, add 10 to the number and count back by 1

9 + 7 = ?

I know 7 + 10 = 17

Counting back 1 from 17 is 16

So, 9 + 7 = 16

- 0 Facts/ - 0 Shortcut – if zero is subtracted from any number, there is not change in the number

8 - 0 = 8

13 - 0 = 13

- 1 Facts/- 1 Shortcut – if one is subtracted from any number, the difference is one less than the number

8 - 1 = 7

13 - 1 = 12

- 9 Facts/ - 9 Shortcut – to find the difference of any number and 9, subtract 10 and then count up by one

17 – 9 = ?

I know 17 – 10 = 7

Counting up 1 from 7 is 8

So, 17 – 9 = 8

- 8 Facts/ - 8 Shortcut – to subtract 8 from any number, first subtract 10, the add 2

13 – 8 = ?

I know 13 – 10 = 3

Counting up 2 from 3 is 5

So, 13 – 8 = 5

Addition Fact – two 1-digit numbers and their sum

Addition Facts

7 + 3 = 10

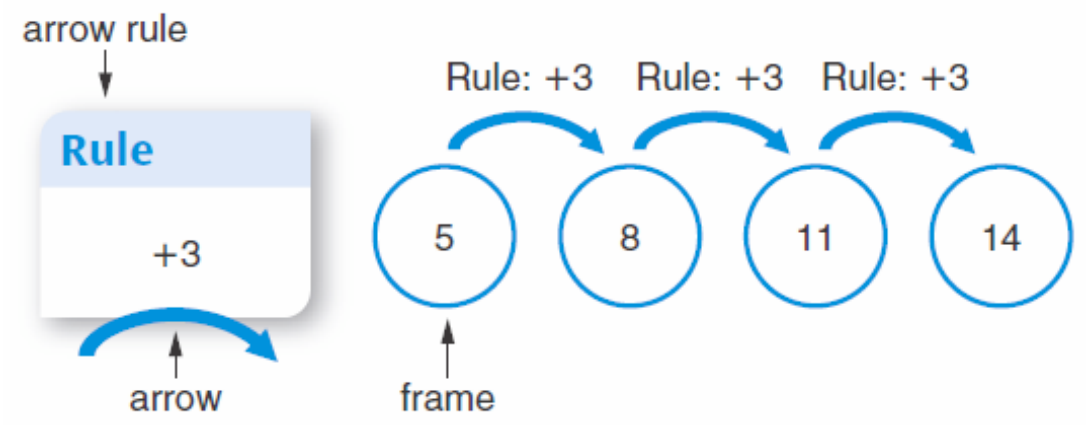
$$\begin{array}{r} 9 \\ +6 \\ \hline 15 \end{array}$$

Addition Number Story – a story problem that requires addition

Joe has 7 baseball cards. Ben gives him 5 more. How many baseball cards does Joe have now?

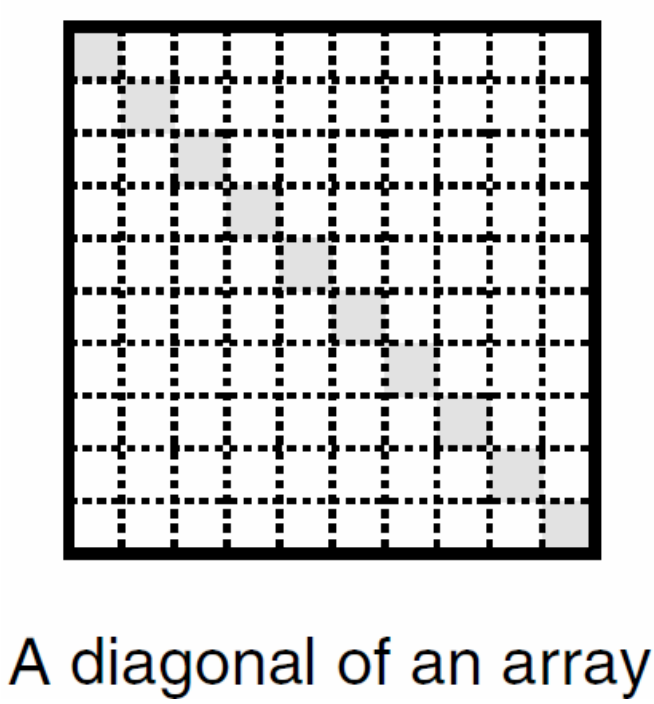
7 + 5 = 12

Arrow/Arrow Rule - an operation that determines the number that goes into the next frame in a *Frames and Arrows* diagram; there may be more than one arrow rule per diagram

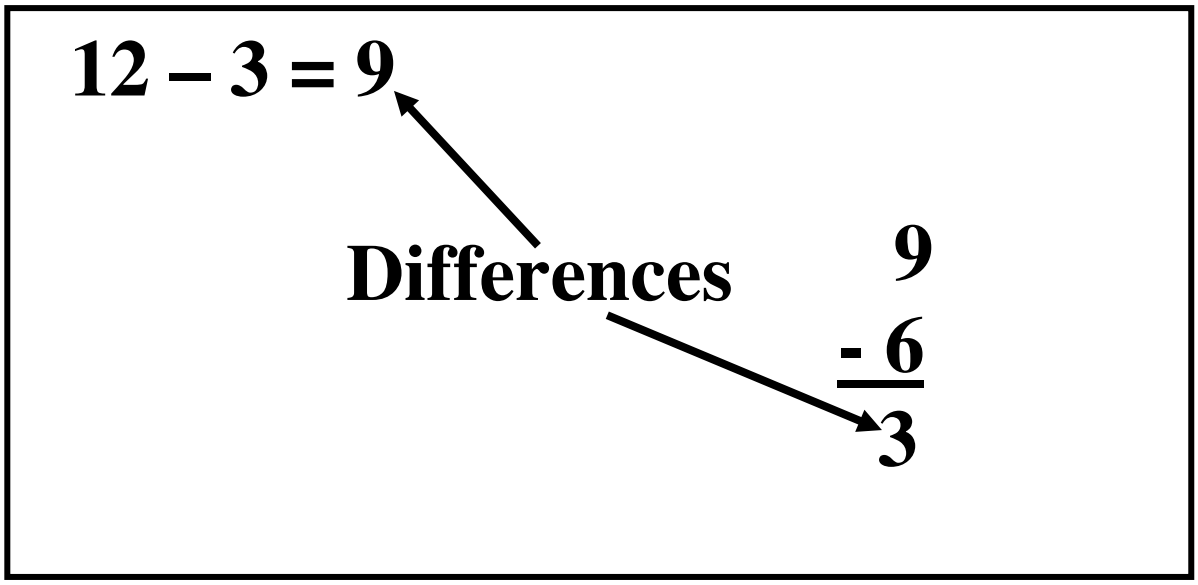


Column – a vertical arrangement of objects or numbers in an array or table; "back and forth"

Diagonal – a line of objects or numbers from upper left to lower right, or from upper right to lower left, in an array or table



Difference – the result of subtracting one number from another



Doubles Facts – a number plus itself and its sum

1 + 1 = 2	6 + 6 = 12
2 + 2 = 4	7 + 7 = 14
3 + 3 = 6	8 + 8 = 16
4 + 4 = 8	9 + 9 = 18
5 + 5 = 10	10 + 10 = 20

Doubles Fact + 1 – if you know the doubles facts for a number, you can figure out the doubles + 1 by doubling and adding 1

7 + 8 = ?

I know that 7 + 7 = 14

So 7 + 8 is one more than 14

So 7 + 8 = 15

Doubles + 2 Facts - if you know the doubles facts for a number, you can figure out the doubles + 2by doubling and adding 2

6 + 8 = ?

I know that 6 + 6 = 12

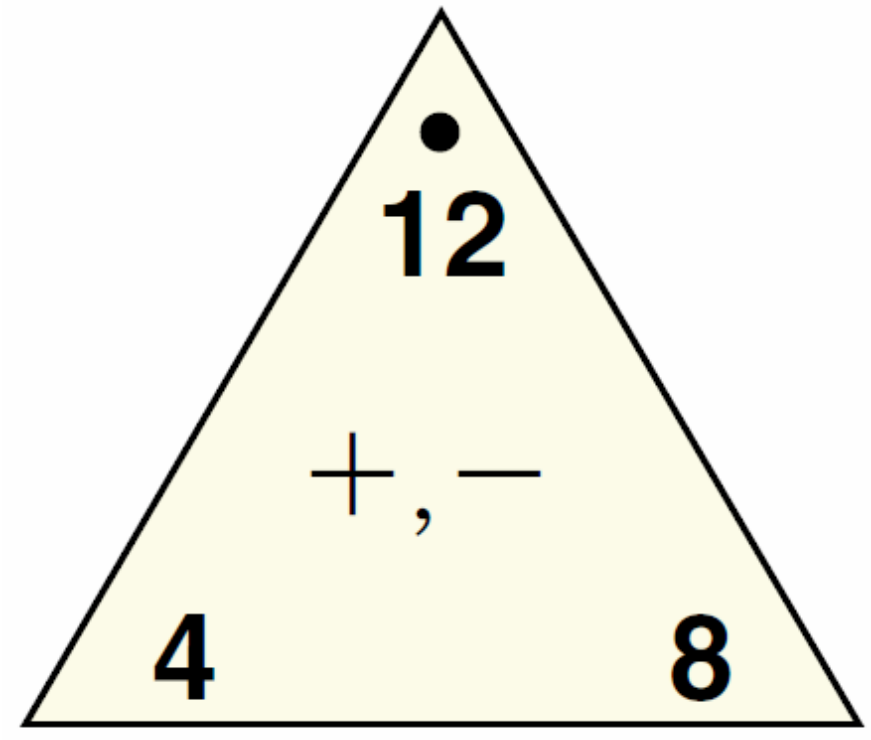
So 6 + 8 is two more than 12

So 6 + 8 = 14

Fact Family– a set of related arithmetic facts linking two inverse operations

Fact Family	
5 + 7 = 12	12 - 7 = 5
7 + 5 = 12	12 - 5 = 7

Fact Power – the ability to recall basic arithmetic facts automatically

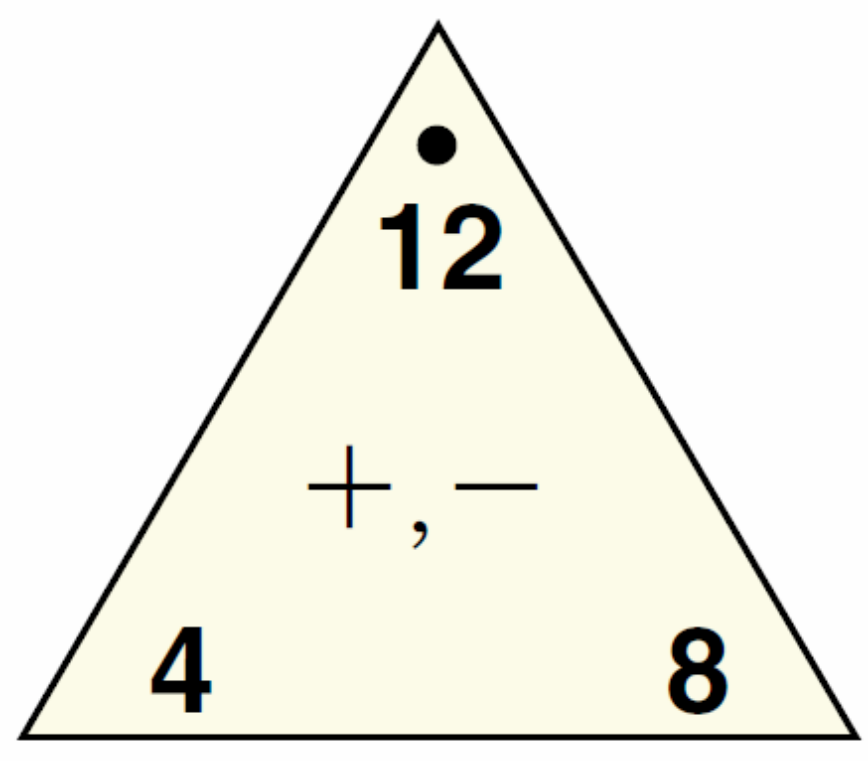


Facts Table – a resource used to help add or subtract any two numbers

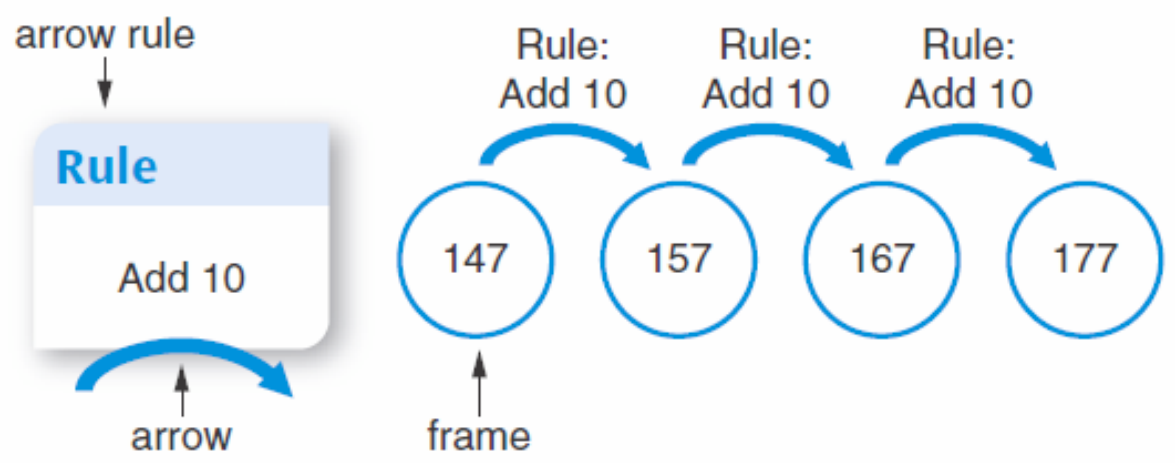
LESSON 2•3 **Addition/Subtraction Facts Table**

+,–	0	1	2	3	4	5	6	7	8	9
0	0	1	2	3	4	5	6	7	8	9
1	1	2	3	4	5	6	7	8	9	10
2	2	3	4	5	6	7	8	9	10	11
3	3	4	5	6	7	8	9	10	11	12
4	4	5	6	7	8	9	10	11	12	13
5	5	6	7	8	9	10	11	12	13	14
6	6	7	8	9	10	11	12	13	14	15
7	7	8	9	10	11	12	13	14	15	16

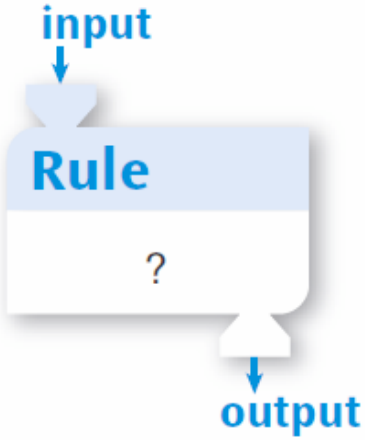
Fact Triangle – a triangular flash card labeled with the numbers of a fact family that students can use to practice addition and subtraction



Frames/Frames and Arrows Diagrams - diagrams consisting of frames connected by arrows used to represent number sequences; each frame contains a number, and each arrow represents a rule that determines which number goes in the next frame; there may be more than one rule, represented by different-color arrows



Function Machine/What's My Rule? – a problem in which two of the three parts of a function (input, output, and rule) are known, and the third is to be found out



in	out
4	2
7	5
12	10
8	

A "What's My Rule?" problem

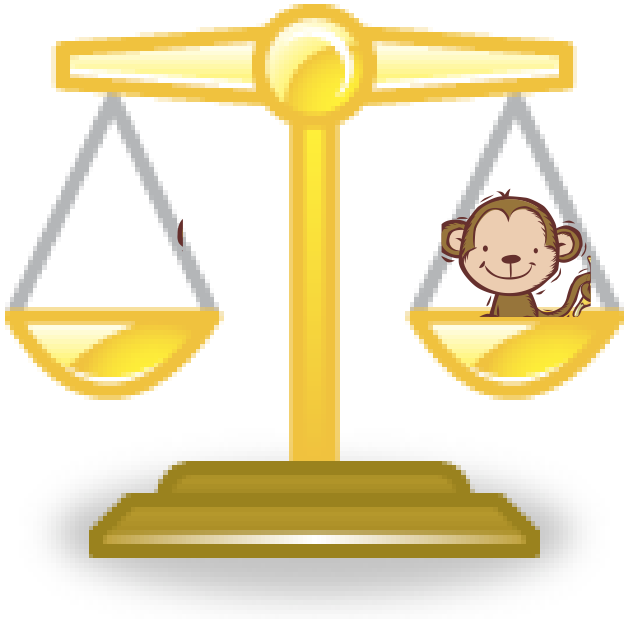
Heavier – weighing more; having more weight

The cat is heavier than the mouse.

Lighter – weighing less; having less weight

The mouse is lighter than the cat.

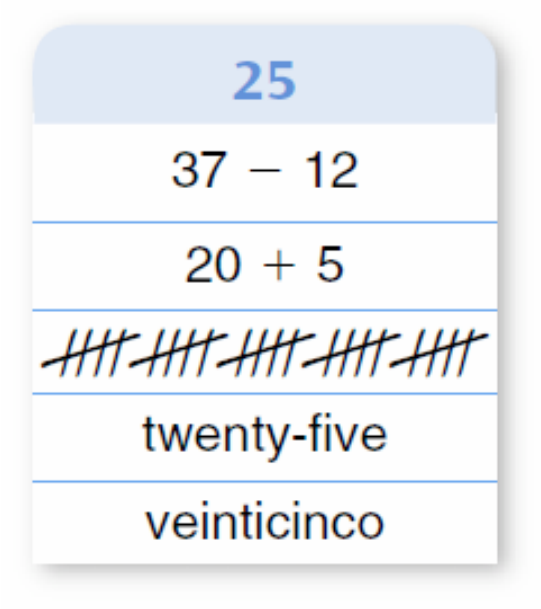
In balance/Balanced – two sides of a pan balance are even or balanced; when this happens, the objects in the two pans are said to have the same weight



Label – words that go with numbers to describe the units which the numbers represent

Labels
16 apples
12 cookies
3 horses

Name-Collection Box – a diagram that is used for collecting equivalent names for a number



Number Model – a number sentence, expression, or other representation that models a number story or situation

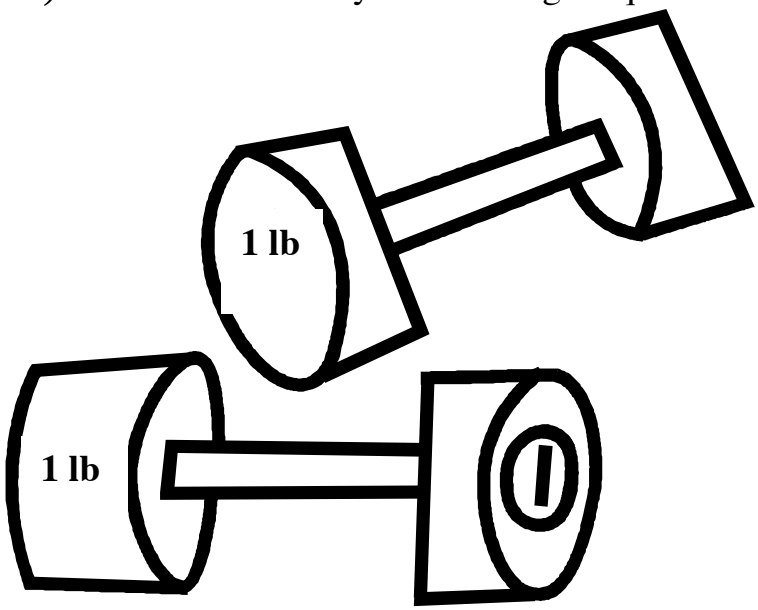
Sally had $5.00 and then earned $3.00 more. How much money does Sally have now?

Number Model = $5.00 + $3.00 = $8.00

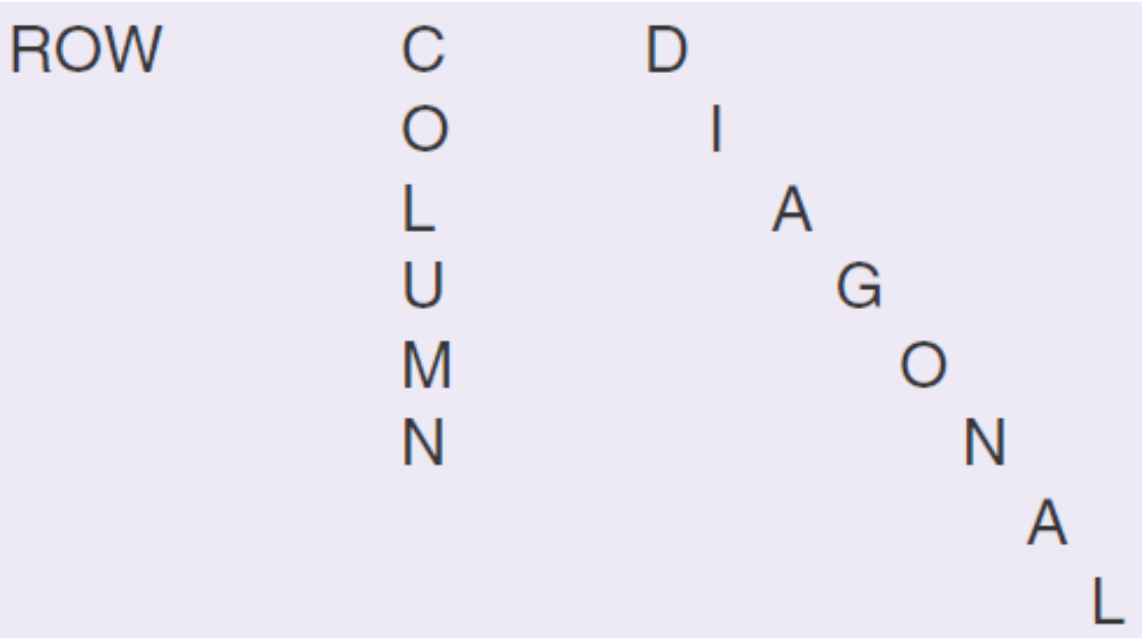
Ounce (oz) – a U.S. customary unit of weight equal to $^{1}/_{16}$ of a pound

Pan Balance – a device used to weight objects or compare their weights

Pound (lb) – a U.S. customary unit of weight equal to 16 ounces



Row – a horizontal arrangement of objects or numbers in a table or an array



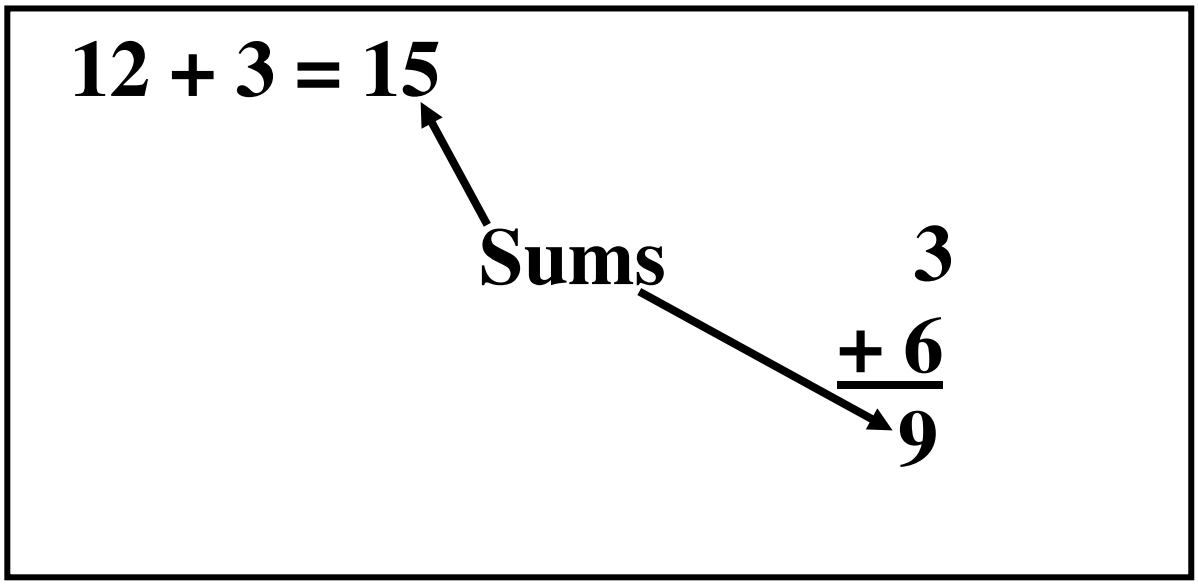
Spring Scale – a device used to weigh objects that are less than one pound; numbers on the spring scale represent **ounces**, not pounds

Subtraction Number Story – a story problem that requires subtraction

Joe has 15 baseball cards. He gives Ben 7. How many baseball cards does Joe have left?

15 – 7 = 8

Sum – the result of adding two or more numbers



Turn-around Rule/Facts – a rule for solving addition and multiplication problems based on the Commutative Property

If you know 6 + 8 = 14, then you know 8 + 6 = 14

If you know 6 * 8 = 48, then you know 8 * 6 = 48

Unit Box – a label used to put a number in context; students often keep track of units in unit boxes